CHAPTER 5.0
CUMULATIVE IMPACTS

CEQA Guidelines require a discussion of cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." (2011 CEQA Guidelines, Section 15130). As defined by Section 15065 (a)(3) "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (2011 CEQA Guidelines, Section 15065 (a)(3). These cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355).

The discussion of cumulative impacts is further guided by CEQA Guidelines Section 15130(a) and (b), which states the following:

- An EIR shall not discuss impacts which do not result in part from the project evaluated in the EIR.
- When the cumulative effect of the project's incremental contribution and the effect of the other projects is not significant, the EIR shall briefly indicate why and not discuss it further.
- An EIR may identify a significant cumulative effect, but determine that a project's contribution is less than significant. That conclusion could result if the project is required to implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact.
- The discussion of cumulative impacts shall reflect the possibility of occurrence and severity of the impacts and focus on cumulative impact to which the identified other projects could contribute.

Federal regulations implementing NEPA also require that the cumulative impacts of a proposed action be assessed. NEPA defines a cumulative impact as an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR 1508.7). Additionally, NEPA states that cumulative effects can be the result of individually minor but collectively significant actions which take place over a period of time (40 CFR 1508.7). NEPA also requires a determination of the nature and degree of effect that a proposed discharge will have, both individually and

cumulatively, on the structure and function of the aquatic ecosystem and organisms (40 CFR 230.11(g)).

In general, effects of a particular action or a group of actions would be considered cumulative impacts under the following conditions:

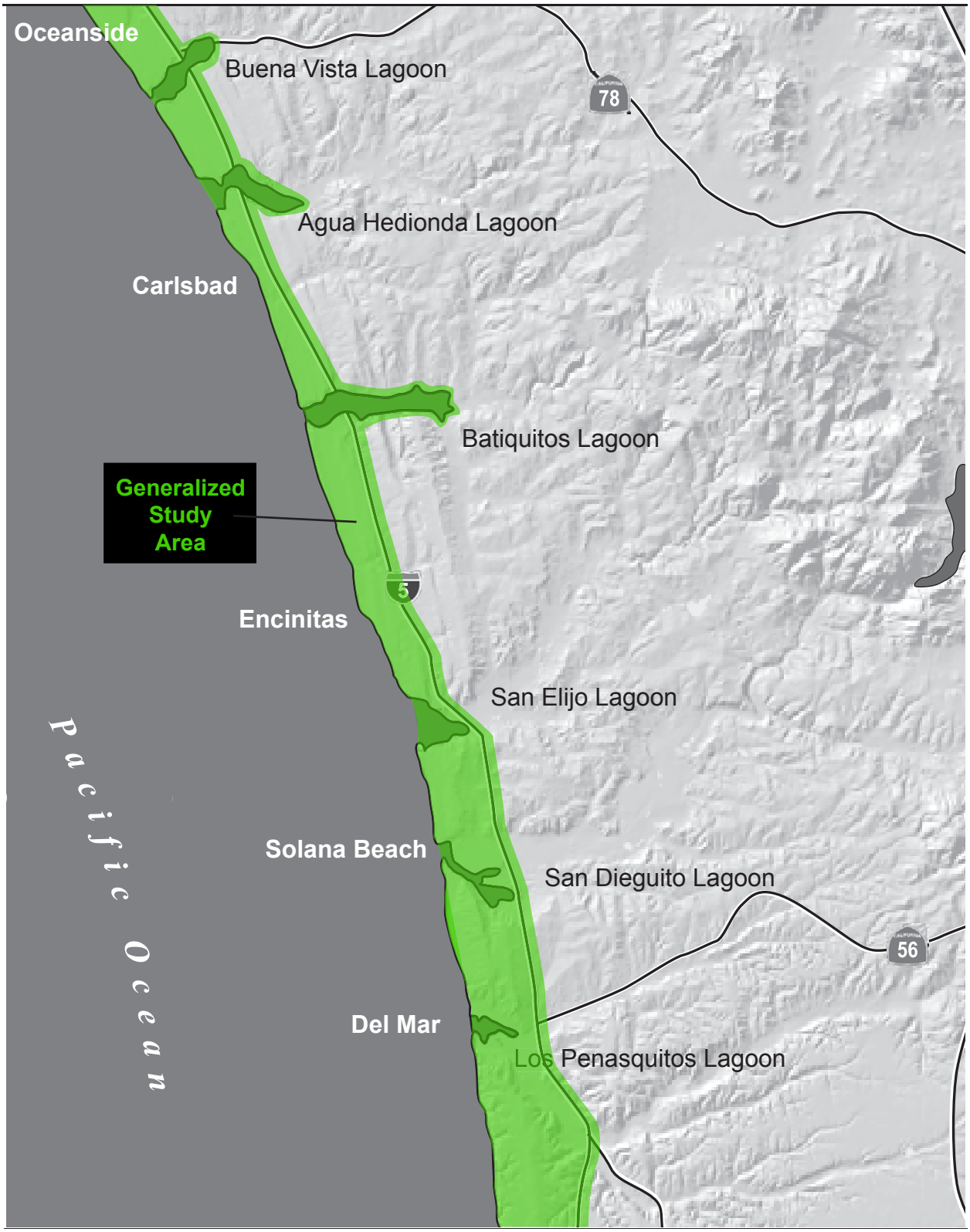
- effects of several actions in a common location,
- effects are not localized (i.e., can contribute to effects of an action in a different location),
- effects on a particular resource are similar in nature (i.e., they affect the same specific element of a resource), and
- effects are long term (short-term impacts tend to dissipate over time and cease to contribute to cumulative impacts).

5.1 DESCRIPTION OF CUMULATIVE ENVIRONMENT

The study area for this cumulative analysis varies somewhat by issue area but for most issues is the north county coast, with a focus on Solana Beach and Encinitas given their proximity, plus key lagoons from Carlsbad to Del Mar. One key exception is air quality, which is addressed at a regional (county-wide) level because standards are set by ARB at this more gross scale (Figure 5-1).

There are six lagoons along northern San Diego County with a long history of human modifications, particularly construction of north-south infrastructure like roads and rail that run perpendicular to each of the lagoon features. Only in the past few decades has the focus been on ecological restoration of those lagoons. The most recent is restoration at San Dieguito Lagoon where planning and implementation occurred between 1997 and 2011. Here, fill was removed to transform upland/farmland acreage to wetland habitat. Restoration of Batiquitos Lagoon was implemented over 15 years ago to create a more tidally open system. The planning efforts at San Elijo Lagoon have been underway for more than 10 years, and planning for enhancement of Buena Vista Lagoon was recently reinitiated. Substantial beach nourishment efforts were associated with restoration at Batiquitos Lagoon (over 1.8 mcy more than 15 years ago) and lagoon functional improvements for infrastructure facilities at Agua Hedionda Lagoon (500,000+ cy).

Additionally, there have been many projects involving materials placement on local beaches along the San Diego region coastline. Several involved placing sand from large- and small-scale maintenance dredging onto nearby beaches. There was also the large-scale 2001 RBSP offshore



Note: Air Quality is addressed at the regional APCD level

No Scale

Figure 5-1
Generalized Cumulative Study Area

dredging effort, which placed 2 mcy of sand along 12 locations from Oceanside to Imperial Beach. The 2012 RBSP placed 1.5 mcy of material on eight receiver sites along this same coastline, including locations within the current project study area. Much smaller replenishment actions have resulted from opportunistic projects from upland coastal development.

Thus, the study area has a long history of project actions (restoration and beach nourishment) at lagoons and along the coast.

5.2 PROJECTS CONSIDERED IN THE CUMULATIVE IMPACTS ANALYSIS

The cumulative projects considered in the following analysis are listed in Table 5-1 and the cumulative study boundary is noted in Figure 5-1. Most of the projects are located along the Encinitas and Solana Beach coastlines; however, key infrastructure projects are slightly inland and parallel to the coast. Key lagoons to the north and south are noted as well because recreational and habitat resources are similar between these lagoons and can be somewhat interchangeable regionally for people and wildlife. If the geographic scope is expanded or narrowed for a specific topic area, it is described in the appropriate section.

Table 5-1 identifies the project name, the jurisdiction within which the action would occur or has occurred, a brief description, and the anticipated schedule for implementation. This list primarily includes planned projects that are on file with local jurisdictions or agencies. Relevant, known projects that have not yet begun the planning process may also be included in this list for the purposes of disclosure, although adequate information may not be available at this time to determine their potential cumulative contribution. Additionally, recently completed projects are also included on the list for informational purposes, even though the environmental effects of a previously completed project would be considered in existing conditions and included in the overall baseline. The city-wide Sand Compatibility and Opportunistic Use Program (SCOUP) efforts are noted for the various cities that have adopted the concept, although total authorized volumes have not yet been placed at any approved receiver site. It is unknown if the full placement amounts would occur given they are based on by-products of other approved projects. However, the few modest sand placements that have occurred via the SCOUP structure are noted under the City of Encinitas. No placement has occurred to date in Solana Beach. Programmatic policy documents (i.e., Coastal Regional Sediment Management Plan, Shoreline Preservation Strategy, General Plan updates) are not included in the cumulative project list, as those are considered strategic planning documents that do not necessarily provide authority for implementation and generally do not identify specific projects.

Table 5-1
Cumulative Projects List – San Elijo Lagoon Restoration

Project Name	General Location/Jurisdiction	Project Type	Description	Project Status/Schedule
Various Jurisdictions				
2012 RBSP	Oceanside, Carlsbad, Encinitas, Del Mar, Solana Beach, San Diego, Imperial Beach	Sand Nourishment	The project involved beach replenishment of the San Diego region's eroding beaches with 1.5 mcy of dredged sediment from three offshore borrow sites. This project involves four main functions: (1) to replenish the littoral cells and receiver sites with suitable beach sand; (2) to provide enhanced recreational opportunities and access at the receiver sites; (3) to enhance the tourism potential of the San Diego region; and (4) to increase protection of public property and infrastructure. Several receiver sites from this 2012 project, and a similar regional project in 2001, are within the cumulative study area. Monitoring of the 2001 RBSP confirmed no long-term significant impacts to beach or offshore resources.	The project was completed in the fall of 2012 and the EIR/EA determined no long-term significant or adverse impacts. Post-construction physical monitoring is underway for 4 years after completion. Monitoring of the 2001 RBSP noted sand volumes at receiver locations were negligible 5 years post-project.
Sand Compatibility and Opportunistic Use Program (SCOUP)	Oceanside, Carlsbad, Encinitas, Solana Beach, Coronado, and Imperial Beach. (See also Encinitas and Solana Beach below for city-specific details.)	Opportunistic Sand Nourishment Program	Implementation of opportunistic sand replenishment program to allow for the processing of multiple beach replenishment projects over a 5-year period as material may become available from other active projects. For each jurisdiction, this program authorizes the issuance of a General Lease – Public Agency Use of Lands in the Pacific Ocean for a term of 5 years, but the start and end dates vary. Details regarding permitted placement volumes and receiver sites are noted in Encinitas and Solana Beach below. The other programs are both too distant (Coronado and Imperial Beach) or have not implemented any actions to date (Oceanside).	Plans approved by local jurisdictions; initially for 5 year terms that expired in 2013. However, City of Carlsbad extended their program until 2016 and Solana Beach for an additional 5 years. Extensions are in process for Oceanside and Encinitas, with the addition of new receiver sites.
One Paseo Project (SCOUP)	Project located in City of San Diego, but possible sand placement in Carlsbad, Encinitas, and/or Solana Beach	Opportunistic Sand Nourishment placement, as by-product of mixed use development	The project is a proposed mixed-use development in Carmel Valley with substantial residential, retail, office, and open space (800,000 to 1,800,000 square feet). It is possible that 300,000 cy of beach sand-compatible material could be hauled to the beach in one or more SCOUP participating cities.	EIR released May 2012; recirculated EIR October 2013. Significant unmitigable impacts to traffic and community character.
I-5 North Coast Corridor Project	San Diego north coast region, from San Diego to Oceanside	Highway Facility Improvements	Caltrans - District 11 proposes improvements to a 27-mile stretch of I-5 in San Diego County. The proposed project begins at La Jolla Village Drive in the City of San Diego and ends at Harbor Boulevard in the City of Oceanside (post mile 28.4/55.4). Currently, I-5 is an eight-lane freeway with some auxiliary lanes that are frequently over capacity and subject to traffic congestion and travel delays. This project proposes four build alternatives to add a combination of features that include High Occupancy Vehicle/Managed Lanes (HOV/ML) that support multiple occupancy vehicle travel, auxiliary lanes to reduce traffic weaving and congestion, a possible additional general purpose lane in each direction of travel, and Direct Access Ramps (DARs) to improve access to the HOV/MLs. The project is expected to be constructed in phases through 2040.	Notice of Preparation (NOP) October 2004 Draft EIR/EIS July 2010. Supplemental Draft EIS/EIR released August 2012. Final EIR/EIS issued October 2013. Permitting still ongoing. A Public Works Plan (PWP)/Transportation Restoration Enhancement Program (TREP) is being prepared to identify mitigation and enhancement actions for the entire coastal corridor to mitigate for I-5 and railroad improvements. These measures may include completion of bicycle and pedestrian connections, improving trails, upgrading new and existing transportation facilities, re-creation of habitat (upland and wetland), plus compensatory mitigation projects that would provide "functional lift" to coastal resources. The PWP/TREP identifies restoration of San Elijo Lagoon and/or Buena Vista Lagoon as opportunities. The stated intent is to improve ecological heath and hydrological connectivity as well as enhance critical coastal resources and habitats.
Los Angeles to San Diego Rail Corridor Improvements Project (LOSSAN) Rail Corridor Improvements	Throughout San Diego coastal region	Railway infrastructure improvements	During the next 20 years, SANDAG plans to construct nearly $820 million in improvements in the San Diego County section, including a primary effort to double-track the corridor from Orange County to downtown San Diego. To date, approximately half of the San Diego corridor has been double-tracked. Other infrastructure improvements include bridge and track replacements, new platforms, pedestrian undercrossings, and other safety and operational enhancements. The	Portions of the project ongoing. Coastal corridor impacts from LOSSAN are also addressed in the PWP/TREP described above for I-5 North Coast Corridor Project.

Project Name	General Location/Jurisdiction	Project Type	Description	Project Status/Schedule
			bridge in San Elijo Lagoon would be double-tracked.	Consistent with state legislation, improvements to I-5 bridge crossing and LOSSAN rail bridged in San Elijo lagoon must be performed at the same time.
San Elijo Nature Center	County of San Diego	Building Structure	The two-story facility at the San Elijo Lagoon Ecological Reserve serves as a base for education, land stewardship, and environmental protection. It is constructed of recycled building materials and features solar panels, irrigated roof plants, and recycled water.	Construction completed 2009.
U.S. Army Corps of Engineers				
Encinitas-Solana Beach Coastal Storm Damage Reduction and Beach Nourishment Project	Encinitas/Solana Beach	Shoreline Protection/Sand Nourishment	The purpose of this project is to effectively reduce risks to public safety and economic damages associated with bluff erosion and to restore beaches along the shorelines of the cities of Encinitas and Solana Beach. The Solana Beach–Encinitas shoreline study area examines two segments: Segment 1 is within the city limits of Encinitas and extends approximately 7,800 feet from the 700 block of Neptune Avenue south to West H Street; Segment 2 is the majority of the beach within the city limits of Solana Beach, approximately 7,200 feet long extending from the southern city limits north to Tide Park, close to the northern city limits of Solana Beach. The tentatively recommended plan is composed of beach nourishment of a 100-foot-wide beach for the City of Encinitas with renourishment cycles every 5 years and a 200-foot-wide beach for the City of Solana Beach with renourishment cycles every 13 years. The tentatively recommended plan would result in an initial placement of sand of 680,000 cy at Encinitas and 960,000 cy at Solana Beach. Sand would be dredged from offshore, beyond the depth of closure, using borrow sites designated as SO-5, MB-1, and SO-6. That material would then be placed directly onto the two receiver sites within Encinitas and Solana Beach. Beaches would be replenished periodically over 40-year life span to maintain selected beach width.	EIS/EIR issued in December 2012. Based on alternative chosen, project implementation could occur from 2015 through 2060. Federal funding needed to implement and not available at this time. If material from lagoon restoration were placed on Project receiver sites, then the storm damage reduction project would not place additional sand. The two projects would be additive, although given the lack of federal funding, it is highly unlikely the shoreline project would be implemented in the time period of the SELRP.
Encinitas				
Sand Compatibility and Opportunistic Use Program (SCOUP)	Encinitas	Opportunistic Sand Nourishment Program	This city program authorizes deposition of sand adjacent to Batiquitos Beach and Moonlight Beach at an annual maximum of 120,000 cy and 150,000 cy, respectively. Incidental project implemented as described below.	Mitigated Negative Declaration (MND) completed. Approved for period 2010–2015. Permitting and CEQA ongoing to expand program and add two more receiver sites (Leucadia and Cardiff). MND prepared.
Moonlight Beach Sand Replenishment	Encinitas	Annual Sand Nourishment	The City of Encinitas imports sand annually to Moonlight Beach to augment the naturally occurring sand at the beach. This program imports approximately 1,000 cy of sand in the spring from inland sand-borrow areas for placement on the upland portion of the beach. Sand is trucked in, placed in an area above the mean high tide line, and spread across the back beach.	Approved; occurs annually in May since 2000.
Scripps Memorial Hospital – Parking Lot Removal	Encinitas	Development/Opportunistic Sand Nourishment Project	Approximately 5,000 cy of sand was dispersed at intertidal portions of Moonlight Beach from this upland development project, which consisted of the construction of a multi-story parking garage at Scripps Memorial Hospital. This sand placement project was authorized under the City's SCOUP.	Completed March 2010.
Pacific Station	Encinitas	Development/Opportunistic Sand Nourishment Project	Approximately 37,000 cy of sand was placed on Batiquitos Beach as part of the construction of a mixed-use development at 687 South Coast Highway 101, in downtown Encinitas. Export material was generated from a two-story underground parking garage.	Completed 2009.
San Elijo Lagoon Mouth Opening	Encinitas	Maintenance Dredging/Sand Placement	This project excavates sediment from the mouth of San Elijo Lagoon to maintain the opening and places the cobble and sand material south of the mouth on Cardiff Beach. An average of 20,000 cy is bypassed (sand entering lagoon from alongshore transport from north of the inlet is placed on beach south of the inlet) from the lagoon per event.	Opening generally occurs twice annually on an as-needed basis.
Encinitas Resorts Hotel	Encinitas	Development/Opportunistic Sand Nourishment Project	This project placed material excavated from a hotel project on the beach at Leucadia.	Completed 2009.
San Elijo Joint Powers Authority (JPA) Recycled Water Expansion Improvement Project	Encinitas	Wastewater Infrastructure	The project created an additional 600 acre-feet per year of new water supply; improved water quality, reliability and operational efficiency of the recycled water produced at the facility; added treatment to allow the facility to accept and treat urban runoff; and created new opportunities to protect coastal water quality. Project improvements included (1) constructing 0.5 mgd of advanced wastewater treatment, (2) converting an existing tank to store recycled water, (3) constructing a new recycled water distribution pumping station, (4) converting existing tanks to store treated wastewater from the Escondido Land Outfall for emergency outfall pressure equalization, and (5) constructing new distribution pipelines to serve additional customers. The original project was modified to include stormwater diversion and microfiltration and reverse osmosis to remove salts so the water could be recycled.	San Elijo JPA approved the project on 12/14/2009. An MND was finalized and the Notice of Determination was dated 2/14/2011. The project is completed.

Project Name	General Location/Jurisdiction	Project Type	Description	Project Status/Schedule
San Elijo State Beach Replace Lifeguard Headquarters	Encinitas	Parks and Recreation	This project would replace an existing lifeguard headquarters located on a bluff at the southern end of San Elijo State Beach. A replacement lifeguard headquarters facility, consisting of a replacement observation tower and a lifeguard support facility, was proposed in a location that would not be endangered by the bluff erosion but would maintain the current level of visual monitoring for the beach and ocean below and enhance support for lifeguard activities that are currently supplied by other facilities located in Encinitas.	Final MND – no significant environmental effects – 12/28/2006. Awaiting Coastal Development Permit.
Moonlight State Beach Improvement Project	Encinitas	Parks and Recreation	This project includes removing the existing restroom and concession buildings resulting in an increase of beach sand area; adding a combined restroom/concession building totaling approximately 3,600 square feet located at the bottom of the parking lot; and constructing a garage/public overlook building totaling approximately 950 square feet located at the bottom of the C street cul-de-sac. The garage would be used for parking lifeguard trucks, storage containers, and rescue equipment. The top of the garage would serve as a public overlook area.	Construction began fall 2012 and was completed in June 2013.
Sewer Force Main Replacement	Encinitas	Wastewater Infrastructure	Olivenhain Sewer Force Main Replacement along Manchester Avenue from the San Elijo JPA Water Reclamation Facility to the Olivenhain Sewer Pump Station at the Manchester Avenue/I-5 Interchange. Also, Highway 101 Sewer Force Main replacement at the existing bridge across the San Elijo Lagoon mouth on Highway 101.	Completed 2013.
Solana Beach				
Opportunistic Beach Fill Program (SCOUP)\	Solana Beach	Opportunistic Sand Nourishment Program	For Solana Beach, this program authorizes the deposition of sand at Fletcher Cove at an annual maximum of 150,000 cy. No materials placement has occurred or is planned.	Approved for 5-year period 2008–2013. Permits extended for 5 years.
Fletcher Cove Reef Project	Solana Beach	Shoreline Protection	The Corps and the City of Solana Beach are working together to develop the conceptual engineering design for a multipurpose offshore submerged reef located near Fletcher Cove. The primary goal of the reef would be to retain sand to create a wider beach and improve the efficacy of beach nourishment projects.	Conceptual engineering and design completed; Phase II engineering design and environmental review not initiated.
Gateway Park	Solana Beach	Park and Recreation	Purchase of a 3.44-acre parcel, known as the Gateway Property, on the east side of Scenic Highway 101 at the north end of Solana Beach across the highway from Cardiff State Beach for preservation and incorporation in the San Elijo Lagoon Ecological Reserve.	In December 2011, San Elijo Lagoon Conservancy purchased the Gateway Property. Ongoing fundraising for park development.
Fletcher Cove Community Center	Solana Beach	Development	This project includes full refurbishment and accessibility improvements to the existing community center located on a 1-acre site above Fletcher Cove Park.	Construction started 2010; project completed in 2012.
Highway 101 Westside Improvement Project	Solana Beach	Pedestrian/Bicycle Circulation	This project is a pedestrian and bicycle circulation improvement project to promote traffic calming, safe pedestrian mobility, and business vitality in the Highway 101 corridor in Solana Beach. Highway 101 would remain a four-lane roadway after completion of these improvements. The project's extents are between Dahlia Drive and Cliff Street.	Completed in 2013.
Lagoon Restoration Projects				
Buena Vista Lagoon Enhancement Project	Oceanside, Carlsbad	Lagoon Enhancement	Conservation efforts have been ongoing since the 1980s. The Buena Vista Lagoon Enhancement Project (previously referred to as the Buena Vista Lagoon Restoration Project) would enhance approximately 200 acres of wetland habitat at the lagoon. Project goals include: • Create a self-sustaining ecosystem to ensure long-term environmental viability, while incorporating a manageable amount of monitoring and maintenance; • Create a functional ecosystem for nesting, wintering, and year-round foraging of native, migratory, and special-status species; • Maintain existing sensitive habitats and native species diversity while attracting as many naturally occurring species as can be reasonably sustained; • Create conditions that curtail the growth and expansion of exotic species; and • Incorporate appropriate and compatible public uses such as viewing sites, trails, and signage. SANDAG is serving as the lead agency in current Buena Vista Lagoon enhancement planning efforts.	Ongoing enhancement planning; NOP issued May 2014. Draft CEQA document not yet issued. Alternatives identified in the NOP included freshwater system, salt water system and hybrid system. Enhancement of this lagoon is one of two options identified in the I-5 North Coast Corridor PWP/TREP.
Batiquitos Lagoon Restoration Project	Carlsbad	Lagoon Restoration	In 1987, the Port of Los Angeles, City of Carlsbad, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife (CDFW), and State Lands Commission signed an agreement toward implementing the restoration of Batiquitos Lagoon. The restoration would serve as mitigation for loss of marine resources in the Outer Los Angeles harbor due to Port construction activities. Restoration began in March 1994 and, in December 1996, the restoration was completed when the mouth of the lagoon was opened to reestablish continuous tidal flushing. A long-term monitoring program was required for 10 years following the construction period. CDFW manages the lagoon using maintenance funds provided by the Port of Los Angeles.	Complete, restoration began in March 1994 and continued through December 1996.
San Dieguito Lagoon Restoration Project	Del Mar	Lagoon Restoration	The San Dieguito Wetlands Restoration Project revitalized 150 acres of coastal wetlands, creating a fish nursery and a refuge for migratory water fowl and endangered species. The project restored tidal flows, natural habitat, and vegetation.	Completed in 2011, being monitoring for 40 years. Grading refinements implemented in 2014 to reduce elevations west of I-5 and improve wetland funcftion.

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5.3 CUMULATIVE IMPACT ANALYSIS

5.3.1 LAND USE/RECREATION

Section 3.1 identifies no significant land use impacts as a result of activities associated with lagoon restoration or materials disposal/reuse for any of the proposed alternatives as the majority of the project study area would generally maintain its current land use; would not create incompatible land uses; and would not be inconsistent with regulatory policies. Many of the projects on the cumulative project list involve sand nourishment and beach replenishment projects that would also not create land use conflicts as they would be placing sand onto existing beach areas and would not substantially modify the land use of an area or create a new incompatible use. Additionally, many land use plans encourage beach replenishment. Other cumulative projects, such as infrastructure improvements, are not generally of the nature to result in significant land use conflicts or incompatibilities and would improve or upgrade existing infrastructure such as I-5 or the railway corridor. Cumulative projects within the lagoon area would not conflict with coastal access policies as the I-5 North Coast Corridor Project includes trail enhancements and there is currently no pedestrian access for crossing the railroad within the lagoon that could be impacted by the LOSSAN double-tracking project.

For these reasons, the project would not make a cumulatively considerable contribution to a direct or indirect adverse significant cumulative impact related to land use. A less than significant cumulative impact would occur.

Beach nourishment projects on the cumulative list might result in temporary recreational impacts to surfing, beach-going, and other water sports due to restricted areas or access for safety purposes while material is physically placed on the beach areas. However, these recreational impacts would be short term and the overall result would include improved recreational opportunities due to the increased volume of sand and available beach area. The sand nourishment projects have varying implementation timeframes and would not all occur at the same time, leaving ample local beach recreation areas available while project-related restrictions may be in place at other locations.

Some cumulative projects would also serve to enhance the recreational opportunities and value of the lagoon and immediately surrounding areas. As part of the I-5 North Coast Corridor Project, Caltrans would construct an enhanced trail connection on the west side of the widened I 5 bridge over San Elijo Lagoon consisting of a suspended pedestrian walkway structure. It would complement and connect the existing trail system in the lagoon. Additionally, the Draft I-5 North Coast Corridor EIR/EIS states in the land use section that access to existing trailheads and designated trails in the Reserve would be unaffected (Caltrans 2012). Further, the coastal access

enhancements defined in the PWP/TREP would be implemented if the I-5 North Coast Corridor and LOSSAN projects are permitted and constructed. While there may be short-term closures/changes to individual trails, the overall recreation opportunities will be increased. The proposed Gateway Park project adjacent to the south of the lagoon could provide new trails, sitting areas, and a vantage point for wildlife watching. Alternative 1B of the SELRP would also allow for an additional trail within the central basin to complete the existing trail loop between the Nature Center and NCTD access road. Additionally, two cumulative projects at local beaches, San Elijo State Beach and Moonlight State Beach, would replace lifeguard facilities and improve beach amenities.

For these reasons, the temporary restrictions and interruptions to recreational opportunities that would result from the proposed project would not make a cumulatively considerable contribution to a direct or indirect adverse significant cumulative impact related to recreation. Long-term beneficial impacts would result from the proposed project and other cumulative projects. A less than significant cumulative impact would result.

5.3.2 HYDROLOGY

While Section 3.2 identifies an increase in potential flood levels as a result of the project, less than significant permanent or temporary adverse impacts to hydrology would result from implementation of any of the project alternatives. The proposed project would substantially change some of the lagoon's hydrology and tributary drainage patterns (varying in degree by alternative); however, the design-induced changes would cause a net beneficial impact to the hydrology by improving overall circulation with, and improved drainage pathways to, the ocean.

It is possible that other cumulative projects, specifically projects that require substantial earth-moving or surface alterations, or projects that increase impervious surface area such as the I-5 North Coast Corridor Project, could also change and modify local hydrology. However, other cumulative projects would be required to adhere to all federal, state, and local regulatory requirements, and may include preparation of a SWPPP and implementation of BMPs to minimize impacts on surface drainage patterns, the amount of surface runoff, and the exposure of people or property to water-related hazards such as flooding. These regulations and requirements would further aid in minimizing the potential for project impacts that could combine to create cumulative hydrology impacts.

For these reasons, the project would not make a cumulatively considerable contribution to a direct or indirect adverse significant cumulative impact related to hydrology. Long-term beneficial hydrological effects would result in the cumulative scenario. A less than significant cumulative impact would occur.

5.3.3 COASTAL PROCESSES

Project analysis found that less than significant impacts would result from any of the alternatives to littoral processes, sand erosion rates, risk of damage to coastal structures, and coastal wetlands during either the lagoon restoration process or the materials disposal/reuse. Additionally, for Alternative 2A and Alternative 1B, beneficial impacts would result due to onshore materials placement because of reduced risks of damage to coastal structures.

The majority of cumulative projects that would not include sand nourishment activities or other types of onshore or offshore materials removal or placement would not have any effect on coastal processes. However, multiple projects on the cumulative list are sand nourishment projects. The materials deposited on the neighboring beaches from other beach nourishment projects would add sand to the littoral cell in the vicinity of the project area, which could impact littoral processes. However, these sand nourishment projects are generally undertaken to bypass sand that has been temporarily removed from the littoral cell and trapped in locations such as within Oceanside Harbor or the various coastal lagoons. The replenishment of beach sand from the bypass projects can be considered as a cyclic redistribution of sand within the littoral cell and is not anticipated to result in adverse effects to littoral and coastal processes. Larger projects, such as the 2001 and 2012 RBSPs, supply the system because there is no longer an adequate supply of sediment from historic sources (upstream erosion, bluff erosion, etc.). Sand supplies from larger projects eventually distribute throughout the system and exit to canyons and outside depths of closure such that no long-term adverse cumulative effects occur. Additionally, cumulative sand nourishment projects throughout the region would not substantially reduce the 30-mcy deficit identified for the region (SANDAG 2011). Similar to the discussion of the proposed project, onshore beach nourishment resulting from cumulative projects would be beneficial in reducing risks from wave and storm erosion to coastal geology and structures.

For these reasons, the proposed project would not make a cumulatively considerable contribution to a cumulatively significant direct or indirect adverse impact related to coastal processes under any alternative. Some beneficial impacts would result from the onshore material placement as part of the proposed project and other cumulative beach nourishment projects specific to increased protection of coastal geology and structures. A less than significant cumulative impact would result.

5.3.4 WATER QUALITY

As detailed in Section 3.4, the proposed project or alternatives would not create significant impacts to water or sediment quality because a variety of appropriate BMPs would protect water quality, minimize erosion, and minimize sediment transport during construction. Turbidity

plumes may result from materials placement in offshore and nearshore locations, but would settle quickly. However, the potential water quality impacts assoicated with temporary turbidity due to dredging activities are considered potentially significant as the lagoon is a 303d listed water body. Mitigation, PDFs, and regulatory requirements would serve to minimize potential turbidity effects. The proposed project and alternatives would provide a long-term water quality improvement (to varying degrees dependent on alternative) throughout the lagoon by increasing tidal exchange, which would improve lagoon circulation, decrease stagnation, and increase lagoon and coastal water quality. Beneficial improvements have already occurred at San Dieguito Lagoon and may occur at Buena Vista Lagoon if enhancement proceeds.

Water quality and hydrology impacts can have widespread effects to an entire watershed, hydrologic unit, and downstream locations. For this reason, analysis of potential cumulative impacts to water quality must also consider development and projects that are occurring at upstream locations in the watershed. Many of the projects on the cumulative project list, such as beach nourishment and other smaller projects, would not be of the type or magnitude to create significant water quality impacts. However, larger projects, such as the I-5 North Coast Corridor project, LOSSAN project, or other large developments within the watershed, could result in degraded water quality. As described in Section 3.4, multiple federal, state, and local regulations must be complied with to protect water quality. Typically, projects under the Construction General Permit would be required to prepare a SWPPP that identifies BMPs that would be used to prevent pollutant discharge and minimize other water quality impacts. Additionally, projects would be implemented in accordance with RWQCB water quality certifications, which require compliance with applicable water quality standards, limitations, and restrictions. The required adherence to water quality regulations and implementation of required BMPs would minimize the potential for water quality impacts to result from cumulative projects and development throughout the watershed.

Turbidity plumes associated with materials placement under Alternative 2A or Alternative 1B would not be expected to overlap with other areas of turbidity caused by cumulative sand nourishment projects. The proposed project turbidity plumes would be temporary, settle quickly, and be fairly localized. It is unlikely that cumulative sand nourishment projects that create temporary nearshore turbidity would be ongoing in the immediate vicinity at the same time as the proposed project and would be subject to dispersion and dilution by ambient currents, wind, and wave action.

For these reasons, the proposed project would not make a cumulatively considerable contribution to a direct or indirect cumulatively significant adverse impact related to water quality under any alternative. Some beneficial impacts would result to water quality (most

substantially under Alternative 2A) due to increased circulation and tidal exchange. A less than significant cumulative impact would result.

5.3.5 GEOLOGY/SOILS

Project removal and or placement of sediment and other material from the generally flat lagoon basins or the previously disturbed access roads and staging areas would not occur in locations that provide stability for other natural features, such as slopes or hillsides, and would not create increased geologic hazards as described in Section 3.5 for any of the alternatives.

Offshore and nearshore placement of materials is considered to have no geologic or soils impacts. The placement of sand at onshore locations (Alternative 2A and Alternative 1B) would not cause geologic hazards and may actually reduce the potential for geologic hazards as it would serve to protect against the undercutting or erosion of cliffs or other areas subject to wave-induced erosion, thus resulting in the beneficial outcome of reducing slope instability and landslide potential. There would be positive geologic results for the cumulative sand nourishment projects included on the cumulative list.

Construction of a new Coast Highway 101 bridge would potentially occur within soil types subject to liquefaction, erosion, settlement, or other unstable geologic conditions, and would require mitigation including geotechnical investigations and implementation of site-specific measures recommended in the engineering study to ensure appropriate design for structural stability and reducing unstable geologic conditions. The channel under the new I-5 bridge planned by Caltrans would require substantial deepening for improved hydraulics, and a new railroad bridge structure would be constructed by NCTD with a channel extending beneath it as part of the LOSSAN double-tracking project. Multiple regulatory codes and requirements would apply to ensure structures are properly designed and engineered to achieve high safety standards when being constructed in unstable geologic conditions. Similar to the SELRP, the implementing agencies for these bridge projects would be required to perform necessary geologic investigations and meet engineering and design requirements to ensure appropriate design for geologic safety. Adhering to regulations and requirements aid in minimizing the potential for project impacts that could combine to create cumulative geologic and soils impacts.

For these reasons, the activities associated with lagoon restoration and materials placement under any of the alternatives would not increase geologic hazards. **Thus, the proposed project would not make a cumulatively considerable contribution to a cumulatively significant adverse impact related to geology and soils. A less than significant cumulative impact would result.**

5.3.6 BIOLOGICAL RESOURCES

Because the biological resources specific to the lagoon are unique and specialized, lagoon restoration is discussed under a separate heading from the on-site materials placement sites.

Lagoon Restoration

A limited number of lagoon resources are located throughout the San Diego coastline, including Buena Vista, Agua Hedionda, Batiquitos, San Elijo, San Dieguito, and Los Peñasquitos lagoons. Because lagoon resources are specific to specialized conditions of each lagoon, the cumulative analysis for this project focuses on projects that might have the potential to impact biological resources also associated with San Elijo Lagoon.

As described in Section 3.6, restoration construction would result in greater than 50 percent temporal loss of sensitive habitats that would be significantly impacted by construction activities, including coastal salt marsh (low- and mid-), open water, saltpan/open water, and tidal mudflats and is considered a short-term significant and adverse direct impact to these types of habitats. Because the SELRP would closely coincide with other cumulative projects occurring within the lagoon area, such as the I-5 North Coast Corridor and LOSSAN double-tracking projects, sensitive lagoon habitats could be further impacted. **This is considered a short-term significant and adverse cumulative impact.** However, the temporary loss of the habitat within the lagoon is unmitigable as it must occur for the restoration activities to take place, and the potential for receiving recovery after all three are constructed is greater given the simultaneous construction, shortening the overall duration. This cumulative impact would be mitigated over time as the habitats are restored and beneficial habitat impacts would result from the enhanced and restored lagoon function.

The San Dieguito and Buena Vista lagoon restoration projects have the potential, when considered cumulatively with SELRP, to result in temporary cumulative habitat losses should the project schedules overlap. Of issue is the loss of foraging, nesting or over-wintering habitat as part of the relatively limited coastal wetlands in southern California. Long-term, all three projects could serve to improve the ecology (functions and values) of these critical lagoon resources. When considering the potential for short-term impacts, it is important to consider the timing, along with the resources.

The San Dieguito project completed restoration in 2011, but in early 2014, a portion of the site was re-graded as part of the on-going adaptive management plan for the project. The Project created/restored salt marsh, mudflat, subtidal and upland habitats, and fisheries resources, on what was most recently farmed and upland habitat. It created more than 100 acres of coastal

wetlands that is already functioning for the intended fish resources, and many birds as well. While vegetation at San Dieguito will likely not be fully established prior to the SELRP implementation, habitat will already be of higher biological resource value than the pre-project condition and will be available for migratory birds seeking stop-over habitats. Therefore, no cumulative temporal impacts are anticipated when considered with this project.

There is no known implementation date for Buena Vista Lagoon restoration. Funding restrictions make it unlikely that project construction would overlap with the SELRP. It is possible that any restoration activities at Buena Vista Lagoon could occur after SELRP installation but during the subsequent maintenance and monitoring period. Buena Vista Lagoon currently consists of predominantly freshwater and open water habitats, and although several alternatives are being considered for the restoration project (freshwater, saltwater, and hybrid), Buena Vista Lagoon currently supports a different habitat mix than those that would be impacted by the SELRP. San Elijo Lagoon does support freshwater habitats in the east basin; however, project construction would affect a limited amount of freshwater habitats areas relative to the entire lagoon, consisting predominantly of brackish marsh. After full tidal opening at San Elijo Lagoon, it is possible that increased tidal flow may result in the conversion of additional habitat away from freshwater/brackish marsh. However, this is anticipated to be limited to the transitional monitoring area above the restored high water elevation.

If Buena Vista Lagoon is restored to a saltwater habitat mix, a reduction in freshwater habitats would result. However, the limited transition of freshwater habitat at San Elijo Lagoon would not be cumulatively considerable when considered with the restoration of Buena Vista Lagoon, for the following reasons: (1) Conversion of one habitat type to another is not in itself a significant biological impact, as the restoration of degraded habitat (regardless of type) would be ecologically beneficial to sensitive species and the lagoon ecosystem as a whole. (2) Saltwater habitats that would be created at San Elijo Lagoon are regionally far more limited than freshwater marsh habitats (3) Sensitive species relying on freshwater habitats within San Elijo Lagoon are not expected to be significantly impacted by the transition (e.g., clapper rail currently living in the east basin is expected to transition to newly restored low marsh habitats). (4) Habitat impacts at San Elijo Lagoon would be limited in acreage, and the majority of freshwater wetland habitats at San Elijo Lagoon would remain available for resident and migratory species. Therefore, no cumulative significant impacts are anticipated.

Belding's savannah sparrow is a year-round resident of the lagoon and would experience temporary loss of greater than 50 percent of their nesting habitat. This sensitive bird species has the potential to be further disturbed or impacted by other cumulative projects such as the I-5 North Coast Corridor and LOSSAN double-tracking projects taking place in the lagoon within a similar timeframe. It is likely that those cumulative projects would not impact habitat at the same

magnitude as the SELRP as they would be generally more localized, **but the cumulative impacts to Belding's savannah sparrow would be significant and adverse in the short term.**

The proposed project results in the potential for short-term noise impacts to sensitive species as a result of construction activities. When in proximity to wildlife, the effects of dredge and other construction noise may disrupt foraging or breeding behavior of sensitive birds. The dredge is slow and would be operating in one basin at a time; as such, birds could always relocate to quieter habitat. However, relocation during the breeding season is not feasible for nesting birds and this is considered a significant and unavoidable impact. If the I-5 North Coast Corridor Project or LOSSAN double-tracking project were to occur simultaneously and in proximity to the active dredging footprint, it is possible that ambient noise levels would increase to even higher levels. The lagoon restoration dredging activities would play a substantial role in these increased noise levels.

Multiple mitigation options were considered to reduce noise levels that may impact nesting birds during breeding seasons; however, none were found feasible. The use of an electric dredge was considered but eliminated as a noneffective option as the noise levels from an electric dredge compared to diesel dredge do not substantially differ. The use of noise walls was also eliminated as a feasible mitigation option for reasons including habitat concerns that would result from the long-term placement of a noise wall and the substantial length of the noise wall that would be required because the dredge would be moving. A mitigation measure limiting work to outside the breeding season was also considered. However, this would extend the overall construction duration from 2 years to 4 years, prolong the overall period of disruption to foraging birds to 4 years, and add at least 2 years for habitat recovery. This was determined to be biologically undesirable and therefore infeasible. **For this reason, implementation of any project alternative, with the exception of the No Project/No Federal Action Alternative, could make a cumulatively considerable contribution to an adverse temporary significant cumulative biological impact due to noise effects on sensitive birds.**

Multiple cumulative projects that could also include construction are located within the lagoon itself and therefore have the potential to adversely impact sensitive biological resources. Adverse biological impacts resulting from cumulative projects could include the disturbance of sensitive vegetation communities, habitat loss, impacts to nesting and/or foraging habitat of sensitive animal species, restrictions to wildlife movement, degraded water quality, and others. These projects would be subject to all federal, state, and local regulations regarding the avoidance, protection, and mitigation of adverse impacts to biological resources. While some similar adverse biological impacts would occur with the proposed lagoon restoration, they are not considered to combine with other cumulative projects to create a significant adverse impact because of the overall positive beneficial biological results that would occur from the

construction of this proposed project. The proposed project would result in improved hydrologic function, increased foraging habitat, and reversal of the rapid habitat changes occurring under existing conditions. The addition of cumulative projects and their potentially adverse impacts on biological resources would not reduce the proposed project's ability to create improved lagoon ecology, or increase foraging for species, and would result in no overall loss of lagoon resources. The SELRP is, by design, a project for the long-term improvement of water quality and health/diversity of biological resources. **For these reasons, the proposed project would not make a cumulatively considerable contribution to a long-term direct or indirect cumulatively significant adverse impact related to the overall loss of biological resources. A less than significant cumulative impact would result.**

Materials Disposal/Reuse

There are no known cumulative projects proposing offshore disposal, and disposal at LA-5 is limited to a specific volume controlled by EPA; thus, that topic is not discussed further. As noted in the list of cumulative projects, multiple beach placement/nourishment projects could occur along the San Diego coastline and at overlapping onshore locations as proposed by the SELRP. Of the listed cumulative projects, only those involving beach placement/nourishment or associated with the ocean environment have the potential to contribute to cumulative impacts to nearshore and offshore biological resources. It is not reasonable to assume that onshore materials placement would occur simultaneously in areas of immediate proximity, but rather would be coordinated and occur at separated locations along the coast. The Encinitas-Solana Beach Coastal Storm Damage Reduction Project is anticipated to be implemented in 2015; however it identifies the possibility that materials from the SELRP may be substituted or supplement sand for beach nourishment proposed as part of that project rather than being an additional volume of material placed in the system (Corps 2012). Volumes placed as part of the SELRP would therefore not be considered cumulatively with that project. Additionally, marine impacts from onshore or nearshore material placement are typically temporary and localized, and dissipate rapidly with ambient conditions returning quickly. The largest of past sand nourishment projects, the 2012 RBSP, was completed and is in the monitoring phase. Thus, the potential for many cumulative adverse impacts, such as increased turbidity, aquatic wildlife displacement, and other potential biological impacts, would likely not combine as these impacts would have ceased prior to implementation of the SELRP. Other cumulative beach nourishment projects are of a much lesser volume, resulting in even lesser potential for impacts to combine in a cumulative manner. These projects would also be subject to all federal, state, and local regulations regarding the avoidance, protection, and mitigation of biological resources. Environmental documents, such as those for the 2012 RBSP and the Encinitas-Solana Beach Coastal Storm Damage Reduction Project, found that no significant cumulative biological impacts were anticipated from the projects. Overall, Alternative 2A or Alternative 1B, in combination with cumulative beach

nourishment projects, would enhance sandy beach habitat to the benefit of numerous species. The potential for cumulative impacts to sensitive nearshore habitat areas due to increased material in the coastal process is anticipated to be less than significant based on project model predictions**. For these reasons, Alternative 2A or Alternative 1B of the proposed project would not make a cumulatively considerable contribution to a direct or indirect significant adverse cumulative biological impact during onshore or nearshore materials placement. A less than significant cumulative impact would result.**

5.3.7 CULTURAL RESOURCES

Section 3.7 identifies potential significant CEQA impacts to cultural resources under Alternative 2A because the bridge/inlet areas of excavation would be in locations with the possibility for buried unknown cultural resources to be present, and because of the known presence of previously recorded cultural resources in the immediate proximity to the lagoon study area. CEQA mitigation is proposed that would provide for the identification and monitoring of areas with the potential to contain intact cultural resource deposits, and, if necessary, the recovery, curation, and documentation of any resources identified on a DPR form and in CEQA/NEPA technical report. Mitigation and regulatory requirements would require that work be suspended or redirected if human remains were encountered and would also include consultation with local Native American Tribes per CEQA and Section 106 and a protocol for handling the inadvertent discovery of human remains. In accordance with Corps special conditions, all work in the area of the resource would stop until the necessary consultations are completed. Work could then be reinitiated. This would ensure that any cultural resources encountered during construction would be treated in accordance with applicable regulations and guidance. If excavations became necessary because impacts to sites could not be avoided, then permanent curation of the remains would ensure that the important information was retained and documented. Additionally, Alternative 2A, Alternative 1B, and Alternative 1A could result in potential accidental disturbance to nearby cultural resources during construction use of an existing access road. Mitigation was included to require the use of exclusionary fencing to avoid inadvertent disturbance of cultural resources in proximity to the APE, staging areas, and access roads. The proposed mitigation measures would minimize/mitigate the potential for the project to add to the cumulative loss or destruction of significant cultural resources.

Other cumulative projects that involve ground-disturbance would also have the potential to impact buried cultural resources. Similar to the proposed project, these cumulative projects would also be subject to all federal, state, and local regulations mandating the protection of cultural resources. If cumulative projects identify a potential to impact cultural resources, the impact would typically be mitigated through measures such as site preservation or data recovery. These types of mitigation measures allow the cultural resources data to be protected and

preserved to ensure that the critical information necessary to the future study of cultural resource sites and artifacts is not lost or destroyed by the proposed project or other cumulative projects within the study area.

Because the proposed project and cumulative projects must comply with CEQA; NEPA; and all other cultural federal, state, and local regulations, which require adequate analysis and appropriate mitigation of cultural resource impacts, the cumulative impacts to archaeological resources would be expected to be fully avoided, minimized, or mitigated, and critical information regarding regional prehistory preserved and/or documented. While the entire 935-mile route of Highway 101 in California was given historic designation by the state in 1998 and is well over 50 years old, it has been widened and improved many times within the proposed project area and has a low potential to be eligible for listing in the NRHP or CRHR due to loss of integrity. Thus, the overall historic value of this roadway would not be substantially diminished due to the new bridge construction associated with Alternative 2A.

For these reasons, any alternative of the proposed project would not make a cumulatively considerable contribution to direct or indirect adverse cumulative impacts for cultural resources. A less than significant cumulative impact would result.

5.3.8 PALEONTOLOGICAL RESOURCES

As described in Section 3.8, most components of the alternatives would not require excavation that could extend to a depth that may damage or destroy paleontological resources found in highly sensitive underlying bedrock formations. However, the proposed access road along the southern boundary of the lagoon could extend into areas underlain by the highly sensitive Delmar Formation that occurs at or near the surface in the area, so excavation of any depth may have the potential to impact paleontological resources. Thus, per CEQA, these shallow grading activities may disturb the underlying sensitive formation, resulting in a potential for paleontological resources to be damaged or destroyed. Required CEQA mitigation would include monitoring during grading, trenching, or other excavation into undisturbed rock and sediment layers beneath the soil horizons with a fossil recovery program and Paleontological Resource Mitigation Report. This would ensure that any paleontological resources encountered during construction would be adequately treated and the important information retained and documented. This would minimize/mitigate the potential for the project to add to the cumulative loss or destruction of significant paleontological resources. Placement of materials on either the ocean floor or beach areas would also not impact paleontological resources found in underlying parent material. **The alternatives would not make a cumulatively considerable contribution to a cumulatively significant direct or indirect adverse impact related to paleontology. A less than significant cumulative impact would result.**

5.3.9 VISUAL RESOURCES

Section 3.9 identified temporary significant impacts as a result of construction activities under Alternative 2A and Alternative 1B because the visual character of the project site would change substantially from existing conditions due to vegetation removal from a large portion of the central basin, substantial landform alteration, construction equipment in atypical locations, and some outdoor lighting. Additionally, a long-term visual impact associated with the inlet/CBF under Alternative 2A is considered significant and unavoidable. The new inlet and CBFs would introduce a highly visible man-made, linear feature perpendicular to Highway 101 and the contrast to the current beach character would be strong for highly sensitive beach users.

When analyzing cumulative visual impacts, it is important to consider those projects that could alter the existing visual environment with the same viewshed as the project. Other cumulative projects, such as the I-5 North Coast Corridor and LOSSAN double-tracking projects could add to the short-term temporary construction visual impacts within the lagoon. These other cumulative projects could contribute to the short-term visual impact by adding more construction equipment operating in the area, increasing vegetation removal, landform modifications, stockpiling, and other construction-related activities. These visual intrusions would last only for the duration of each project's construction period and, ultimately, the lagoon character would be returned similar to existing preconstruction conditions. The increase in habitat diversity may be even more interesting and appealing and would enhance the aesthetic effect for trail users and visitors at the Nature Center. **However, in the short term, Alternative 2A and Alternative 1B would make a cumulatively considerable contribution to a significant cumulative visual impact due to the cumulative construction projects throughout the lagoon.**

Potential beach placement locations all have various sensitive viewers, ranging from beachgoers, residences, recreationalists, and others. Construction equipment would be temporarily visible during materials placement, typically 2 to 4 weeks and no more than 60 days. Additionally, construction equipment would be mobile and not located in one area for a long period of time as the work progresses along the shore. All potential onshore placement locations have been recipients of beach nourishment in the past and the visual occurrence of construction equipment on these beaches is not highly uncommon. Because few projects can actually be constructed on the sandy beach areas, a limited potential exists for construction of other cumulative projects to occur simultaneously in the vicinity of the materials placement operations. **Because of the short-term and continuous mobile nature of the operations, the materials placement activities would not make a cumulatively considerable contribution to a significant cumulative visual impact. A less than significant cumulative visual impact would result.**

Many of the cumulative projects in the project viewshed would have long-term positive aesthetic outcomes. For example, other cumulative beach nourishment projects typically result in positive overall visual impacts as they enhance the sandy beach aesthetic through the creation of additional sand to cover and supplement the existing beach environment. Large projects such as the I-5 North Coast Corridor project and LOSSAN rail improvements project may slightly change the look of the existing transportation facilities, but would likely not introduce substantial new modifications to the existing visual environment. For these reasons, the adverse visual change that would result from the new inlet and CBFs associated with Alternative 2A is fairly isolated and would not combine with other adverse visual impacts in the immediate area to create a significant direct or indirect adverse cumulative impact to visual resources. **In the long term, Alternative 2A, Alternative 1B, and Alternative 1A would not make a cumulatively considerable contribution to a significant cumulative visual impact due to the cumulative construction projects throughout the lagoon. A less than significant adverse cumulative visual impact would result.**

5.3.10 TRAFFIC

As outlined in Section 3.10, no long-term significant traffic impacts would result from the any of the project alternatives as the proposed project would not result in permanent generation of trips that could increase traffic volumes. However, a significant traffic impact would occur during bridge construction under Alternative 2A and bridge retrofitting activities under Alternative 1B and Alternative 1A along segments of Highway 101 and Lomas Santa Fe Drive. This impact would be temporary, lasting only the duration of the bridge construction or retrofit. The bridge construction or retrofit requires a capacity reduction of two lanes across the Highway 101 bridge. If bridge work were to occur simultaneously with other cumulative projects that either add traffic or change the traffic flow in the immediate area, such as the I-5 North Coast Corridor Project that requires lane closures or other roadway restrictions, it is possible that the resulting changes in traffic volumes and roadway capacities could combine to create greater congestion and traffic impacts. This is not foreseeable but it is not unlikely.

Mitigation measures required for Alternative 2A, Alternative 1B, and Alternative 1A include Traffic-1, which requires a traffic control plan, and Traffic-2, which would include notifying motorists of delays and suggesting earlier detour routes. Additional mitigation measures to reduce the traffic congestion were considered, but none were found to be feasible to mitigate the temporary traffic impacts due to bridge construction. Mitigation such as widening the roadway, roadway modifications, or reducing the scale of the project to generate less traffic volume was not considered feasible or appropriate due to the temporary nature of the traffic impact. **For this reason, implementation of Alternative 2A, Alternative 1B, and Alternative 1A would make**

a cumulatively considerable contribution to a temporary significant cumulative traffic impact.

5.3.11 AIR QUALITY

Air quality is typically considered a regional issue, as pollutants can travel long distances, regardless of jurisdictional boundaries. For this reason, the cumulative analysis considers regional air quality throughout the SDAB. However, localized air quality impacts can also result from numerous construction projects in a small area.

The analysis in Section 3.11 found that temporary construction-related emissions would exceed the recommended levels of significance for ROG and NO_X for Alternative 2A, Alternative 1B, and Alternative 1A and construction activities could lead to a violation of an applicable air quality standard. Implementation of mitigation measures requiring reduced-emission equipment and technology would partially reduce anticipated emissions, but not to levels below the applicable thresholds. Thus, potential violations of air quality standards as a result of construction-related activities would remain significant and unavoidable for all three alternatives.

Additionally for Alternative 2A, NO_X emissions associated with ongoing operational maintenance activities would exceed the applicable mass emission threshold and result in a significant direct impact that could not be reduced to below acceptable threshold levels.

The SDAB currently meets NAAQS for all criteria air pollutants except ozone, and meets the CAAQS for all criteria air pollutants except ozone, $PM_{10,}$ and $PM_{2.5}$. Construction and operation of cumulative projects and general growth and development throughout the region would further degrade the local air quality, as well as the air quality of the air basin. Air quality would be temporarily degraded during construction activities that occur separately or simultaneously. As shown through the cumulative project list, multiple construction projects, including those recently completed as well as projects planned for the future, could have the potential to exceed criteria emission thresholds. Similar to the proposed project, cumulative projects would also be subject to regional air quality regulations and project-specific mitigation measures would be required if thresholds were exceeded. The required adherence to air quality regulations and implementation of mitigation, if necessary, would reduce the potential for significant adverse cumulative air quality impacts to occur throughout the SDAB due to cumulative projects.

A project that produces a significant air quality impact in an area that is out of attainment is considered to significantly contribute to the cumulative air quality impact. Conversely, projects that do not exceed the threshold criteria or can be mitigated to less than criteria threshold levels are considered insignificant contributors and would not substantially add to the overall

cumulative impact. **Because emission levels from all proposed project alternatives could not be mitigated such that pollutant emissions (both temporary and permanent) would be below appropriate thresholds, the proposed project would be making a cumulatively considerable contribution to a significant cumulative air quality impact.**

5.3.12 NOISE

As detailed in Section 3.12, activities associated with the lagoon restoration and materials placement would result in temporary increased daytime noise levels in the immediate vicinity. However, none of these increased noise levels would be in violation of appropriate daytime noise thresholds and would not exceed allowable noise levels as determined by the local jurisdictions. In general, construction activities would have to occur within 100 feet of a residential property line to have the potential to exceed noise level limits.

Noise is a localized issue and potential impacts extend only as far as noise from a project is audible. For this reason, cumulative impacts would only result when two projects are in proximity and occurring concurrently. It is not reasonable to assume that an additional beach nourishment project would take place at the same time and location as materials placement from the proposed project on a proposed onshore site. However, it is possible that another cumulative project could occur during the same timeframe as lagoon dredging. The I-5 North Coast Corridor and LOSSAN double-tracking projects are examples of cumulative projects that would cross the lagoon in proximity to the proposed project and could potentially overlap with the dredging period. Other cumulative projects that could occur in the vicinity of lagoon dredging activities may include the Encinitas-Solana Beach Coastal Storm Damage Reduction Project and other beach nourishment projects, Sewer Force Main Replacement, JPA Recycled Water Expansion Improvements, improvements at San Elijo State Beach, and Gateway Park. Though other cumulative projects are anticipated to occur within the general lagoon area at some point during dredging operations, it is unlikely that the two projects would occur in such proximity to each other and also within 100 feet of a residential property line that their noise could combine and result in an exceedance of noise level thresholds. While background ambient noise levels might be temporarily increased during simultaneous construction of multiple projects, this increase is not anticipated to be above significant levels at nearby receptors. If construction of two projects were ongoing at the same time, construction managers would be working in coordination to maintain appropriate distances between active construction areas to ensure the safety of workers and equipment, which would also limit the potential for their noise to combine in excess of daytime noise limits.

However, due to nighttime dredging and materials placement activities, significant impacts have been identified under CEQA for the proposed project. Project design features have been

incorporated to limit nighttime noise levels, but even with implementation of these measures nighttime construction outside of allowed hours would result in significant impacts. It is possible that cumulative projects in the lagoon area, such as the I-5 North Coast Corridor Project, may also require nighttime construction outside of permitted daytime hours. **Because the nighttime noise impact outside of allowed construction hours cannot be avoided and other cumulative projects may also require nighttime construction, the proposed project would be making a cumulatively considerable contribution to a significant cumulative nighttime noise impact.**

5.3.13 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

As noted in Section 3.13, though minor, the overall social and economic effects of the proposed project would be beneficial. The lagoon represents a valuable coastal wetland with substantial biological and ecological resources. The alternatives proposing onshore reuse of material would provide beaches with wider and larger sand areas to provide greater recreational opportunities and opportunity for public access, enhance tourism in the region, and provide public property and infrastructure additional protection from wave action and storm events. Material disposal and reuse can cause potential for loss of resources and income for local commercial fishermen; however, no significant impacts were identified relative to these concerns.

Many of the cumulative projects also involve beach sand nourishment opportunities that would result in similar beneficial outcomes for local beaches and the associated economics of improved beach conditions. Some other cumulative projects, such as improvements at Moonlight and San Elijo State Beaches, development of Gateway Park, or trails implemented as part of the I-5 North Coast Corridor Project, would result in improved facilities and opportunities available to the general public. Other cumulative projects would also likely draw from the local labor force and provide beneficial socioeconomic results from wages and revenue. While short-term and localized impacts to recreational activities, such as surfing or diving, noise to nearby receptors, or increased traffic congestion may occur during implementation of the proposed project or cumulative projects, the long-term result would include beneficial impacts to recreation, tourism, and associated socioeconomic considerations.

Therefore, implementation of the proposed project does not contribute to a cumulative direct or indirect adverse impact to socioeconomics under any alternative.

5.3.14 PUBLIC SERVICES AND UTILITIES

The proposed project would not result in significant impacts to public services and utilities under any alternative. Minimal amounts of utility provision or other public services would be required for the project. The proposed project has been designed to avoid interference with existing

utilities and, in the few cases where relocation of infrastructure may be required, coordination with the service provider would minimize potential for substantial service interruptions. A specific utility study in advance of project implementation would ensure that all known utilities are specifically located so that the project can fully avoid the existing utilities or initiate early coordination with the utility provider to reduce and limit interruption of service; this would serve to minimize potential for unanticipated impacts.

Generally, the listed cumulative projects would not result in new construction with substantial increase in demand for utilities or public services. Similar to the proposed project, the cumulative sand nourishment projects would also have a fairly minimal demand for the provision of utilities and would generally not have permanent need for service. A large project such as the I-5 North Coast Corridor or LOSSAN double-tracking projects would likely require extensive coordination with public service providers due to necessary infrastructure relocations to avoid interrupted service; however, it is not the type of project that necessitates a substantial increase in the long-term demand for public services or utilities.

Because the project does not result in the need for new systems or substantial alterations to existing systems that would have environmental impacts, the proposed project does not make a cumulatively considerable contribution to a cumulative direct or indirect adverse impact to utilities or public services under any alternative.

5.3.15 HAZARDS AND PUBLIC SAFETY

Other cumulative projects, such as the I-5 North Coast Corridor and LOSSAN double-tracking projects, may also occur within the lagoon basin in an overlapping timeframe with the SELRP and would also be required to comply with all regulatory safety requirements regarding hazardous materials. The mandatory adherence to regulatory requirements limits potential for cumulative risks associated with the use of hazardous materials. Mitigation has been included that would require the proposed project to implement a sediment management plan to avoid risks associated with unknown contaminants that might be encountered during dredging activities and would ensure that the proposed project would not make a considerable contribution to a public safety risk from unknown contaminates.

As described in Section 3.15, the new inlet and CBFs proposed as part of Alternative 2A could pose a safety hazard to persons who stray too close to these areas as some individuals may place themselves in situations that may result in injury should they be thrown against the CBFs or swept into the inlet or a rip current. Mitigation is included in the proposed project to provide improved lifeguard proximity to this area and public awareness signage. Extensive project design

features have been included to ensure no adverse safety hazards result to vessels or the public during project construction for all alternatives.

Implementation of the other cumulative sand nourishment projects could have similar public safety hazards during materials placement. However, as demonstrated with the proposed project, these safety hazards are avoidable through appropriate signage, closures, fencing, barricades, and safety personnel. Additionally, development of cumulative projects would be subject to all regulatory requirements specific to the safe handling and transport of hazardous materials, thus minimizing potential for increased public safety hazards.

The public safety hazard created by the new inlet and CBFs is an extremely localized impact, affecting only the immediate area of those project features, and is mitigated. **Thus, the project does not make a cumulatively considerable contribution to a direct or indirect cumulative public hazard impact.**

5.3.16 Global Climate Change and Greenhouse Gas Emissions

A single project is unlikely to have a significant impact on global climate change. However, the cumulative effects of worldwide GHG emissions have been clearly linked to changes in the atmosphere and identified as the main cause of global climate change. For this reason, analysis of GHG emissions from the project, as provided in Section 3.16, is considered a cumulative impact analysis. Section 3.16 provides a complete analysis of GHG emissions for the proposed project and alternatives. The County of San Diego has established a threshold of 2,500 MT CO_2e per year as a project-level GHG significance. The GHG emissions from construction activities associated with lagoon restoration and materials disposal/reuse for Alternative 2A, Alternative 1B, and Alternative 1A exceed the significance threshold of 2,500 MT CO_2e per year used for analysis of this project. Mitigation measures required of all three alternatives to reduce GHG emissions include GHG-1, which would evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines; GHG-2, which would limit deliveries of materials and equipment to the site to off peak traffic congestion hours; and GHG-3, which would evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. However, these mitigation measures would not reduce emission levels to below the acceptable threshold. **Therefore, implementation of either of these alternatives would result in a cumulatively considerable contribution to GHG emissions or global climate change. No mitigation is available to reduce emissions to below a level of significance.**

Specific to sea level rise and extreme events, the proposed project and alternatives (to varying degrees) would provide a benefit by maintaining and enhancing tidal exchange with the ocean.

This enhancement would increase the ability of the lagoon to slowly adapt to changes in sea level over time. Additionally, lowered flood elevation would provide resiliency against floods, other extreme events, and sea level rise. **Therefore, regardless of other projects' cumulative contributions to sea level rise or extreme events, the proposed project and its alternatives would not result in a cumulatively considerable direct or indirect contribution to sea level rise. The project would result in an overall beneficial outcome.**

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